

10 (1) generating a second set of one or more waveforms corresponding to a second set  
11 of one or more pre-distortion parameters;

12 (2) differentiating the second set of one or more waveforms with respect to time to  
13 generate a second set of one or more differentiated waveforms; and

14 (3) applying the second set of one or more differentiated waveforms to a negative-  
15 frequency operation to generate the second frequency-dependent pre-distortion signal.

1 5-6. (canceled)

1 7. (previously presented) The method of claim 1, further comprising the step of generating  
2 a frequency-independent pre-distorted signal from the input signal, wherein the frequency-independent  
3 pre-distorted signal and the first and second frequency-dependent pre-distortion signals are combined to  
4 generate the pre-distorted signal.

1 8. (previously presented) The method of claim 1, wherein:  
2 the input signal is represented in a base-band domain; and  
3 the first and second frequency-dependent pre-distortion signals are generated in a digital domain.

1 9. (currently amended) An apparatus for applying pre-distortion to an input signal to  
2 generate a pre-distorted signal, such that, when the pre-distorted signal is applied to an amplifier to  
3 generate an amplified signal, the pre-distortion reduces spurious emissions in the amplified signal, the  
4 apparatus comprising:

5 (a) a first signal processing path adapted to generate a main pre-distortion signal from the  
6 input signal;

7 (b) a second signal processing path adapted to generate a first frequency-dependent pre-  
8 distortion signal corresponding to a first set of frequency components for the input signal;

9 (c) a third signal processing path adapted to generate a second frequency-dependent pre-  
10 distortion signal corresponding to a second set of frequency components for the input signal, wherein  
11 frequencies of the first set of frequency components [[is]] are different from frequencies of the second set  
12 of frequency components; and

13 (d) a combiner adapted to combine the first and second frequency-dependent pre-distortion  
14 signals with the main pre-distortion signal to generate the pre-distorted signal.

1 10. (currently amended) The apparatus of claim 9, wherein:

2 the first set of frequency components corresponds to positive-frequency components of the input  
3 signal, wherein the positive-frequency components correspond to frequencies that are greater than a  
4 center frequency of the input signal; and

5 the second set of frequency components corresponds to negative-frequency components of the  
6 input signal, wherein the negative-frequency components <sup>correspond</sup> to negative frequencies that are smaller than the  
7 center frequency of the input signal.

1 11. (previously presented) The apparatus of claim 10, wherein:

2 the first frequency-dependent pre-distortion signal is generated by:

3 (1) generating a first set of one or more waveforms corresponding to a first set of  
4 one or more pre-distortion parameters;

5 (2) differentiating the first set of one or more waveforms with respect to time to  
6 generate a first set of one or more differentiated waveforms; and

7 (3) applying the first set of one or more differentiated waveforms to a positive-  
8 frequency operation to generate the first frequency-dependent pre-distortion signal; and

9 the second frequency-dependent pre-distortion signal is generated by:

10 (1) generating a second set of one or more waveforms corresponding to a second set  
11 of one or more pre-distortion parameters;

12 (2) differentiating the second set of one or more waveforms with respect to time to  
13 generate a second set of one or more differentiated waveforms; and

14 (3) applying the second set of one or more differentiated waveforms to a negative-  
15 frequency operation to generate the second frequency-dependent pre-distortion signal.

1 12. (previously presented) The apparatus of claim 11, wherein the positive-frequency and  
2 negative-frequency operations are implemented using filters.

1 13. (currently amended) The apparatus of claim 9, wherein:

2 the first set of frequency components corresponds to positive-frequency components and  
3 negative-frequency components of the input signal; [[and]]

4 the second set of frequency components corresponds to only positive-frequency components or  
5 only negative-frequency components of the input signal;

6 the positive-frequency components correspond to frequencies that are greater than a center  
7 frequency of the input signal; and